Technical Service Information 2005

Models 8500, 8500M, 8500A, and 8500MA

CE 0123

English

P/N 4051-000 Rev B

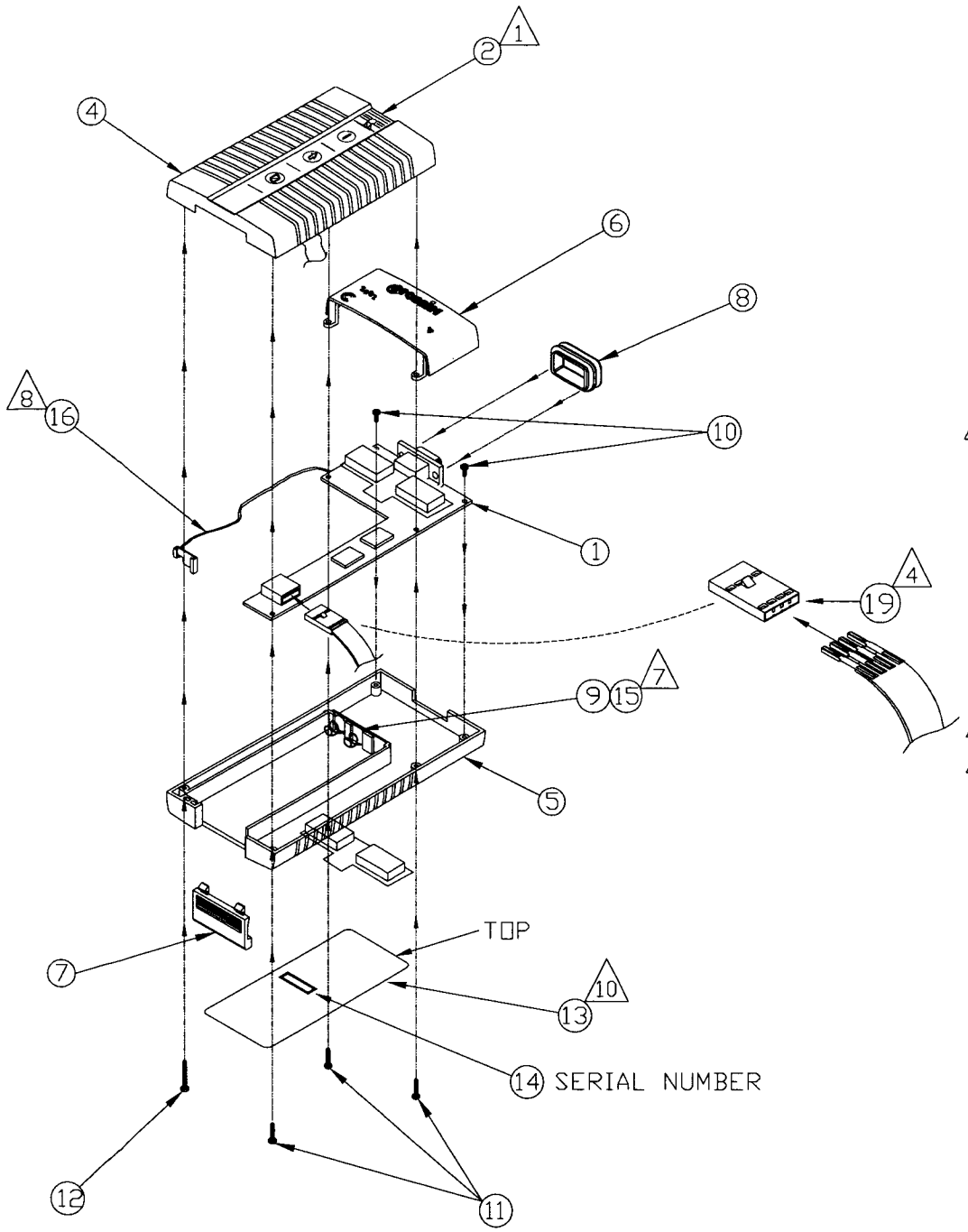
NOTES:

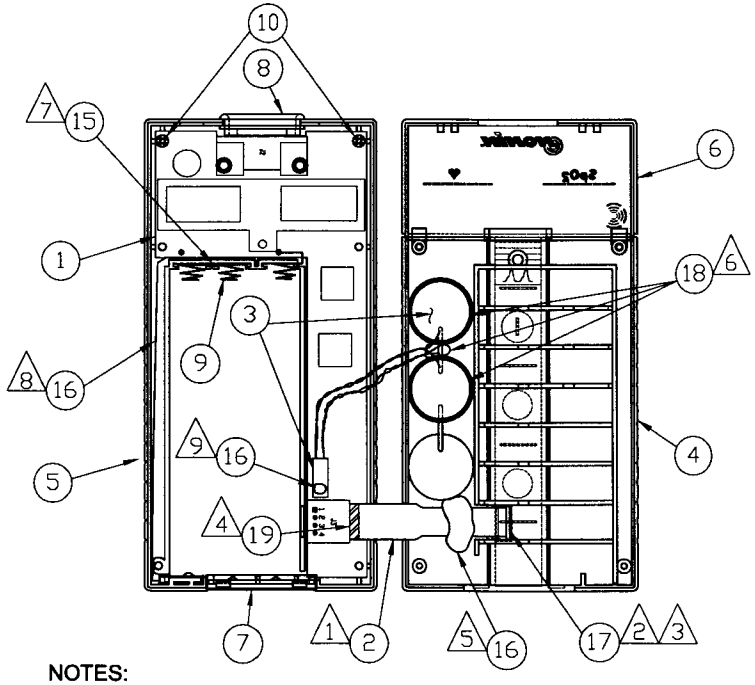
1. COMPONENTS INSIDE DASHED AREA ARE ONLY USED ON ALARM UNITS.
2. COMPONENTS INSIDE DASHED AREA ARE ONLY USED ON MEMORY UNITS.
3. JP2 REMOVED ON MEMORY UNITS.

REVISION HISTORY					
ZONE	EN	REV	DESCRIPTION	DATE	EN ORIGINATOR
	2704	A	Initial Release	10/28/02	RAR

UNLESS OTHERWISE SPECIFIED	DRAWN BY	DATE	NONIN MEDICAL INC. PLYMOUTH, MN CONFIDENTIAL
DIMENSIONS ARE IN INCHES	RAR	10/31/02	
TOLERANCES ON	CHECKED BY	DATE	The information disclosed herein is confidential and is proprietary to Nonin Medical, Inc. Nonin reserves all patent, proprietary and reproduction rights therein. This information is not to be used or disclosed to any persons without the express written authorization of a representative of Nonin Medical, Inc.
.X ± 0.0			
.XX ± 0.00	ELECTRONIC FILE NAME		TITLE
.XXX ± 0.000	3747-000 Rev. A sch		SCHEMATIC, HAND HELD
ANGLES ± 0.0 °	DRAWING CONFORMS TO ANSI 14.5M-19994		8500 (MEMORY)
THIRD ANGLE PROJECTION	DO NOT SCALE DRAWING		SIZE C / DWG NO. 3747-000 / REV A
			SCALE 1 : 1 / PAGE 1 OF 1

REVISION HISTORY					
ZONE	REV	EN	DESCRIPTION	DATE	EN ORIGINATOR
	A	2775	INITIAL RELEASE	01/09/03	RAR
	B	3260	REDUCE SIZE OF LABEL (ID 13)	05/07/04	DYL





NOTES:

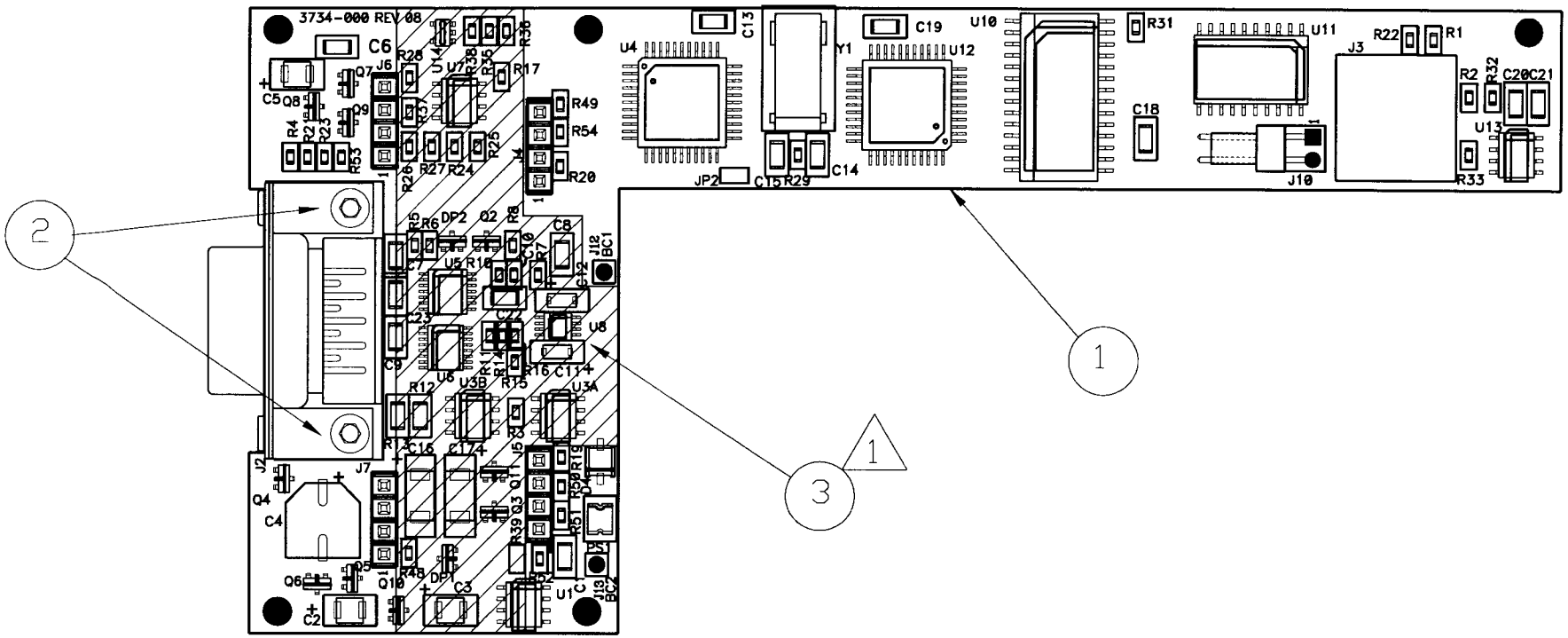
1. PRIOR TO APPLICATION OF SWITCH, CLEAN CHANNEL PER SMP 1568-000.
2. PRIOR TO SWITCH INSTALLATION, APPLY RTV AROUND OPENING OF SWITCH TAIL.
3. RTV MUST NOT APPEAR ON SURFACE OF SWITCH AFTER INSTALLATION.
4. INSTALL FEMALE CONNECTOR AFTER FEEDING FLEX STRIP THROUGH HOLE.
5. GLUE FLEX STRIP TO CASE
6. GLUE PIEZO DISCS FLAT TO CASE.
7. USE ADHESIVE TO SECURE SPRING
8. GLUE WIRE TO CASE.
9. GLUE CONNECTORS TOGETHER.
10. LABEL APPLIED TO BACK OF HOUSING. LABEL TO BE PLACED BY BATTERY DOOR END

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: .X ± .030 .XX ± .010 .XXX ± .005 ANGLES ± 5°	DRAWN BY KEW	DATE 05/10/04	NONIN MEDICAL, INC. PLYMOUTH, MN CONFIDENTIAL This information disclosed herein is confidential and is proprietary to Nonin Medical, Inc. Nonin reserves all patent, proprietary and reproduction rights therein. This information is not to be used or disclosed to any persons without the express written authorization of a representative of Nonin Medical, Inc.
	CHECKED BY LAB	DATE 05/28/04	TITLE FINAL ASSY, 8500MA
	ELECTRONIC FILE NAME 4065-000 REV B.DWG		
THIRD ANGLE PROJECTION	DRAWING CONFORMS TO ANSI Y 14.5M-1994		SIZE C DWG NO 4065-000 REV B
	DO NOT SCALE DRAWING		SCALE – SHEET 1 OF 2

BILL OF MATERIAL

ASSY ID	PART NUMBER	DESCRIPTION	UM	QTY
1	4020-000	ASSY, PCB, TESTED, CONFORMAL COATED, 8500MA	EA	1
2	1282-000	SWITCH, PANEL	EA	1
3	1281-000	ASSY, PIEZO	EA	1
4	1290-001	CASE, HAND HELD TOP HALF	EA	1
5	1290-002	ENCLOSURE, HAND HELD ALARM BOTTOM HALF	EA	1
6	3804-200	ENCLOSURE, HAND HELD LENS	EA	1
7	1293-000	SUBASSEMBLY, BATTERY DOOR AND CONTACT	EA	1
8	2140-006	BEZEL, TOP	EA	1
9	0593-002	SPRING, BATTERY CONTACT COIL	EA	1
10	0669-001	SCREW, THREAD FORMING, #2 x 3/16"	EA	2
11	0669-002	SCREW, THREAD FORMING, #2 x 1/2"	EA	3
12	0669-003	SCREW, THREAD FORMING, #2 x 11/16"	EA	1
13	1269-000	LABEL, SERIAL/CAUTION HAND HELD MEMORY ALARM	EA	1
14	1672-001	LABEL, PACKAGE, BAR CODE S/N	EA	1
15	0165-000	ADHESIVE, CYANOACRYLATE	A.R.	
16	0133-000	GLUE, HOT MELT	A.R.	
17	1932-000	732 RTV SEALANT	A.R.	
18	0398-000	LOCTITE	A.R.	
19	3370-004	CONNECTOR, FEMALE, POLARIZED, SINGLE ROW, 4 POSITION	EA	1
REF	3969-000	FINAL TEST PROCEDURE	N/A	N/A

REVISION HISTORY				
REV	EN	DESCRIPTION	DATE	EN ORIGINATOR
C	3225	REPLACE PROGRAMMED MICRO U4	02/05/04	DWE
D	3273	REPLACE U4 WITH 4657-000	03/11/04	HHG
E	3412	REPLACE U4 WITH 4803-000	08/10/04	PAC

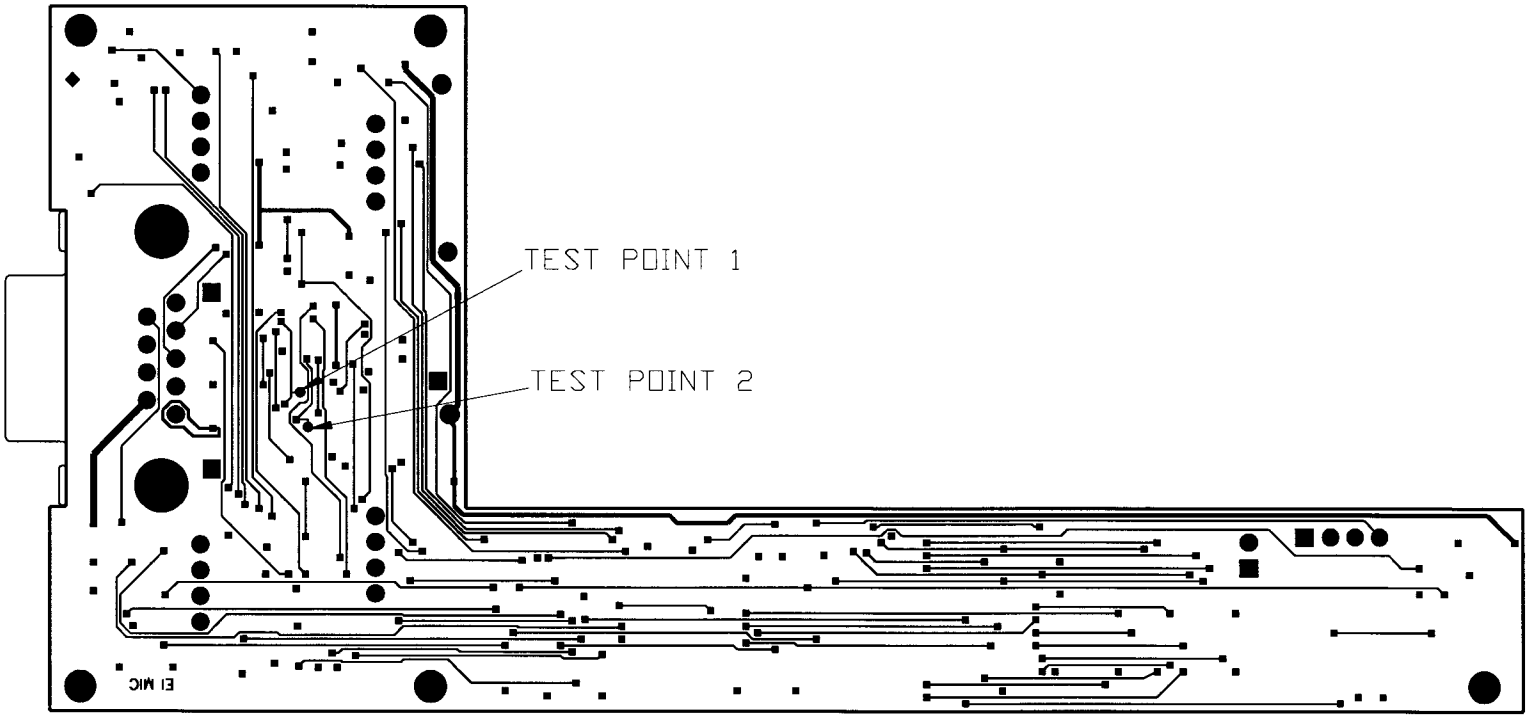


NOTES:

1 CONFORMAL COAT (CROSS HATCHED AREA) AFTER INSTALLATION AND CLEANING OF COMPONENTS.

2) COMPONENT JP2 NOT POPULATED.

UNLESS OTHERWISE SPECIFIED	DRAWN BY	DATE	NONIN MEDICAL, INC. PLYMOUTH, MN CONFIDENTIAL
DIMENSIONS ARE IN INCHES TOLERANCES ON: .X ± .030 .XX ± .010 .XXX ± .005 ANGLES ± 5°	KEW	08/10/04	The information disclosed herein is confidential and is proprietary to Nonin Medical, Inc. Nonin reserves all patent, proprietary and reproduction rights therein. This information is not to be used or disclosed to any persons without the express written authorization of a representative of Nonin Medical, Inc.
	CHECKED BY LAG	DATE 08/11/04	TITLE PWBA, PROCESSOR, 8500MA
THIRD ANGLE PROJECTION	ELECTRONIC FILE NAME 3735-000 REV E.DWG		SIZE B · DWG NO 3735-000 · REV E
	DRAWING CONFORMS TO ANSI Y 14.5M-1994		SCALE N/A · SHEET 1 OF 5
	DO NOT SCALE DRAWING		



NONIN MEDICAL, INC.
PLYMOUTH, MN

TITLE: PWBA, PROCESSOR, 8500MA

SIZE	DWG NO	REV
B	3735-000	E

SCALE N/A

SHEET 2 OF 5

BILL OF MATERIAL

ASSY ID	PART NUMBER	DESCRIPTION	UM	QTY
U1	0563-000	IC, uPOWER VOLTAGE REGULATOR (SO)	EA	1
U3A, U3B	2226-000	IC, COMPLIMENTARY FET-DUAL ARRAY (SO)	EA	2
U4	4803-000	PROGRAMMED MICRO, 8500A	EA	1
U5	2239-100	IC, LinCMOS QUAD OP-AMP (TSSOP-14)	EA	1
U6	2506-000	IC, TRIPLE ANALOG MULTIPLEXER (QSOP-16)	EA	1
U7	0427-103	IC, JFET OP-AMP PAIR (SO)	EA	1
U8	2946-001	IC, DUAL ANALOG SWITCH (8uMAX)	EA	1
U10	0192-100	IC, STATIC RAM (32K x 8K)	EA	1
U11	0290-100	IC, OCTAL LATCH	EA	1
U12	3744-000	IC, uCONTROLLER PROGRAMMED MEMORY	EA	1
U13	2194-000	IC, DUAL INVERTING DRIVER	EA	1
U14	2348-001 2348-002♣	IC, COMPARATOR, TINY CMOS (SOT23-5)	EA	1
Q2	1148-002	TRANSISTOR, NPN LOW NOISE (SOT23)	EA	1
Q3	2305-000	FET, N-CHANNEL DMOS (SOT23)	EA	1
Q4,5, 6,7,8, 9,11	1894-000	MOSFET, P-CHANNEL (SOT23)	EA	7
Q10	2215-000 2215-001♣ 2215-002♣	MOSFET, P-CHANNEL LOW ON-STATE RESISTANCE (SOT23)	EA	1
D4	1896-000	DIODE, SCHOTTKY, SMD (SC802-04)	EA	1
DP1, DP2	2148-000	DIODE, DUAL SERIES SWITCHING (SOT23)	EA	2
PS1	2538-004	POLYSWITCH, SMD	EA	1
R1,2, 22	2146-193	RESISTOR, 1/16W, 1%, 1K OHM	EA	3
R3	2146-001	RESISTOR, 1/16W, 1%, 10 OHM	EA	1
R4,8, 32	2146-289	RESISTOR, 1/16W, 1%, 10K OHM	EA	3
R5,6	2145-089	RESISTOR, 1/16W, 5%, 4.7K OHM	EA	2
R7	2146-210	RESISTOR, 1/16W, 1%, 1.5K OHM	EA	1
R10	2146-189	RESISTOR, 1/16W, 1%, 909 OHM	EA	1
R11	2146-381	RESISTOR, 1/16W, 1%, 90.9K OHM	EA	1
R12	0423-023	RESISTOR, 1/8W, 5%, 8.2 OHM	EA	1
R13	0423-031	RESISTOR, 1/8W, 5%, 18 OHM	EA	1
R14	2146-319	RESISTOR, 1/16W, 1%, 20.5K OHM	EA	1
R15, 16,25	2146-481	RESISTOR, 1/16W, 1%, 1.00M OHM	EA	3

BILL OF MATERIAL

ASSY ID	PART NUMBER	DESCRIPTION	UM	QTY
R17, 21,23, 26,27, 28,31, 33,35	2146-385	RESISTOR, 1/16W, 1%, 100K OHM	EA	9
R19, 20	2145-061	RESISTOR, 1/16W, 5%, 330 OHM	EA	2
R24	2146-464	RESISTOR, 1/16W, 1%, 665K OHM	EA	1
R29, 37	2146-576	RESISTOR, 1/16W, 1%, 10M OHM	EA	2
R36	2146-375	RESISTOR, 1/16W, 1%, 78.7K OHM	EA	1
R38	2145-156	RESISTOR, 1/16W, 5%, 3M OHM	EA	1
R48, 49, 50, 51,52, 53,54	2145-066	RESISTOR, 1/16W, 5%, 510 OHM	EA	7
C1,6, 8,13, 18.19, 20,21, 22,23	0422-033	CAP, X7R CHIP, 10%, 0.1uF, 25V(MIN), (1206)	EA	10
C2,3,5	1902-073	CAP, TANTALUM CHIP, 10%, 10uF, 10V, (EIA 3528)	EA	3
C4	3738-252	CAP, AL ELECTROLYTIC LOW ESR, 470uF, 10V, (8X10.5)	EA	1
C7	0421-025	CAP, MONO CHIP, 10%, 100pF (1206)	EA	1
C9	0421-038	CAP, MONO CHIP, 10%, 1200pF (1206)	EA	1
C10	2091-015	CAP, NPO CHIP, 10%, 10pF, 50V (0603)	EA	1
C11, 12	1902-565	CAP, TANTALUM CHIP, 2%, 3.3uF, 10V (EIA 3216)	EA	2
C14, 15	0421-017	CAP, MONO CHIP, 10%, 22pF (1206)	EA	2
C16, 17	1902-051	CAP, TANTALUM CHIP, 10%, 47uF, 6.3V (EIA 6032)	EA	2
Y1	0568-001 1889-000♣ 3174-000♣	CRYSTAL, uPROCESSOR LOW PROFILE 4.000MHz (SM)	EA	1
J2	1725-000♦	CONNECTOR, 9-PIN D-SUB	EA	1
J3	0587-004♦	CONNECTOR, SINGLE ROW 4-PIN	EA	1
J10	1299-002♦	CONNECTOR, RIGHT ANGLE LOCKING	EA	1

BILL OF MATERIAL

ASSY ID	PART NUMBER	DESCRIPTION	UM	QTY
J4,5,6, 7	3651-001♦	STACKER, BOARD	EA	4
J12	PART OF 3734-000	THROUGH-HOLE SOLDER PAD FOR BC1	REF	-
J13	PART OF 3734-000	THROUGH-HOLE SOLDER PAD FOR BC2	REF	-
1	3734-000	P.C. BOARD, SM 8500 (NOTE: PCB# 3734-000-08)	EA	1
2	3977-000	RIVSCREW, THREADED RIVET	EA	2
3	4509-000	ACRYLIC COATING, 1H71	AR	-
REF	3747-000	SCHEMATIC, HANDHELD 8500 (MEMORY) CIRCUIT	REF	-

NOTES

♦ These components are leaded components.

♣ These components are alternates.

Model 8500 Handheld Pulse Oximeter
Common Replacement Parts
February, 2005

Part	Part Number	USD Price
battery - spring contact (feed through)	0593-002	3.10
battery – positive spring contact	0593-001	2.70
battery - negative contact sub assembly	0671-000	10.40
battery door w/ contact for **8500, 8500M**	0670-000	5.20
case bottom for **8500, 8500M**	0592-002	8.60
case top for **8500, 8500M**	0592-001	8.40
battery door w/ contact for **8500A, 8500MA**	1293-000	6.60
case bottom for **8500A, 8500MA** (recommend the label also)	1290-002	9.60
case top for **8500A, 8500MA** (recommend switch panel also)	1290-001	9.60
collar - gray	2140-006	1.10
connector – 15 pin (J3) recording output	0899-006	5.00
connector - 4 pin (J 3)	0587-004	3.20
connector - 9 pin (J2) Surface Mount (also need screws & nuts)	0571-001	15.50
connector - 9 pin (J2) thru hole	1725-000	15.00
screw, button socket cap, for replacing J2 connector (2/connector)	1519-000	1.00
nut, nylon insert stop, for replacing J2 connector (2/connector)	1520-000	1.00
label for **8500** bottom (serial number & warning)	0644-000	1.30
label for **8500M** bottom (serial number & warning)	0935-000	1.80
label for **8500A** bottom (serial number & warning)	1268-000	2.80
label for **8500MA** bottom (serial number & warning)	1269-000	2.80
lens for **8500, 8500M**	3804-100	8.60
lens for **8500A, 8500MA**	1290-003	9.70
LED seven segment	0569-006	9.50
10 pin dip socket for seven segment display	0602-201	1.00
screw - external (ea)	0669-002	1.00
screw - internal for pcb (ea)	0669-001	1.00
switch panel (membrane) for **8500, 8500M, 8500A** and **8500MA**	1282-000	16.60
Top Case Assembly **8500A** and **8500MA**	1315-086	65.00

* Current prices are subject to future change.